Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A method, in a data processing system, for resource allocation of a plurality of tasks carrying penalties based on their completion time, the method comprising:

assigning the plurality tasks to one or more resources; ~~and~~

assigning start times for the plurality of tasks such that expected penalties for completion times of the plurality of tasks are minimized, wherein expected penalties are minimized by continually assigning tasks and start times based on predictable potential next events;

allocating thinking time into separate thinking time partitions within each time slot for each problem instance of a plurality of the predictable potential next events, wherein an optimal amount of think time is calculated for each problem instance of the plurality of the predictable potential next events;

during each allocated thinking time partition, allocating resources for a predicted next event at a predicted time at which the predicted next event may occur; and

assigning resources for queued tasks based upon an actual next event and an actual time of occurrence.

2. (Canceled)

3. (Canceled)

4. (Currently Amended) The method of claim [[3]] 1, wherein the step of allocating thinking time includes:

reserving a first amount of time for performing an initial algorithm; and

allocating a second amount of time for performing a randomized algorithm.

5. (Original) The method of claim 4, wherein the step of allocating resources for a predicted next event at a predicted time at which the predicted next event may occur includes:

executing the initial algorithm to form a preliminary solution;

recording a seed value of zero to indicate that a current solution is the preliminary solution; and

repeatedly executing the randomized algorithm until an event occurs or the second amount of time expires.

6. (Original) The method of claim 5, further comprising:

responsive to the randomized algorithm forming a solution that is better than a previous solution, updating the seed value.

7. (Original) The method of claim 5, wherein the step of assigning resources for queued tasks based upon an actual next event and an actual time of occurrence includes:

determining whether a best solution was found using the initial algorithm or the randomized algorithm; and

responsive to the best solution being found using the initial algorithm, executing the initial algorithm and assigning resources based on results of the initial algorithm.

8. (Original) The method of claim 7, further comprising:

responsive to the best solution being found using the randomized algorithm, executing the randomized algorithm using the seed value and assigning resources based on results of the randomized algorithm.

9. (Original) The method of claim 8, further comprising:

assigning only immediately starting tasks.

10. (Original) The method of claim 5, wherein an event is one of a job arrival, a task completion, a data change arrival, a managerial schedule request, and a termination request.

11. (Original) The method of claim 10, wherein a job includes one or more tasks.

12. (Canceled)

13. (Currently Amended) An apparatus, in a data processing system, for resource allocation of a plurality of tasks carrying penalties based on their completion time, the apparatus comprising:

a processor running a scheduler; and

at least one module coupled to the scheduler, wherein the scheduler provides:

means for assigning the plurality tasks to one or more resources; ~~and~~

means for assigning start times for the plurality of tasks such that expected penalties for completion times of the plurality of tasks are minimized, wherein expected penalties are minimized by continually assigning tasks and start times based on predictable potential next events;

means for allocating thinking time into separate thinking time partitions within each time slot for each problem instance of a plurality of the predictable potential next events, wherein an optimal amount of think time is calculated for each problem instance of the plurality of the predictable potential next events;

during each allocated thinking time partition, means for allocating resources for a predicted next event at a predicted time at which the predicted next event may occur; and

means for assigning resources for queued tasks based upon an actual next event and an actual time of occurrence.

14. (Currently Amended) A computer program product[[, in]] comprising a computer readable medium[[,]] having encoded thereon computer usable program code for use within a data processing system for resource allocation of a plurality of tasks carrying penalties based on their completion time, the computer program product comprising:

computer usable program code ~~instructions~~ for assigning the plurality tasks to one or more resources; and

computer usable program code ~~instructions~~ for assigning start times for the plurality of tasks such that expected penalties for completion times of the plurality of tasks are minimized, wherein expected penalties are minimized by continually assigning tasks and start times based on predictable potential next events;

computer usable program code for allocating thinking time into separate thinking time partitions within each time slot for each problem instance of a plurality of the predictable potential next events, wherein an optimal amount of think time is calculated for each problem instance of the plurality of the predictable potential next events;

computer usable program code for allocating resources, during each allocated thinking time partition, for a predicted next event at a predicted time at which the predicted next event may occur; and

computer usable program code for assigning resources for queued tasks based upon an actual next event and an actual time of occurrence.

15. (Canceled)

16. (Canceled)

17. (Currently Amended) The computer program product of claim [[16]] 14, wherein the instructions for allocating thinking time includes:

computer usable program code ~~instructions~~ for reserving a first amount of time for performing an initial algorithm; and

computer usable program code ~~instructions~~ for allocating a second amount of time for performing a randomized algorithm.

18. (Currently Amended) The computer program product of claim 17, wherein the instructions for allocating resources for a predicted next event at a predicted time at which the predicted next event may occur includes:

computer usable program code ~~instructions~~ for executing the initial algorithm to form a preliminary solution;

computer usable program code ~~instructions~~ for recording a seed value of zero to indicate that a current solution is the preliminary solution; and

computer usable program code ~~instructions~~ for repeatedly executing the randomized algorithm until an event occurs or the second amount of time expires.

19. (Currently Amended) The computer program product of claim 18, further comprising:

computer usable program code ~~instructions~~ for responsive to the randomized algorithm forming a solution that is better than a previous solution, updating the seed value.

20. (Currently Amended) The computer program product of claim 18, wherein the instructions for assigning resources for queued tasks based upon an actual next event and an actual time of occurrence includes:

computer usable program code ~~instructions~~ for determining whether a best solution was found using the initial algorithm or the randomized algorithm; and

computer usable program code ~~instructions~~ for responsive to the best solution being found using the initial algorithm, executing the initial algorithm and assigning resources based on results of the initial algorithm.

21. (Currently Amended) The computer program product of claim 20, further comprising:

computer usable program code ~~instructions~~, responsive to the best solution being found using the randomized algorithm, for executing the randomized algorithm using the seed value and assigning resources based on results of the randomized algorithm.

22. (Currently Amended) The computer program product of claim 21, further comprising:

computer usable program code ~~instructions~~ for assigning only immediately starting tasks.

23. (Original) The computer program product of claim 18, wherein an event is one of a job arrival, a task completion, a data change arrival, a managerial schedule request, and a termination request.

24. (Original) The computer program product of claim 23, wherein a job includes one or more tasks.